WHAT IS CLAIMED IS:

1. A fixing apparatus comprising:

a fixing device including a fixing roller and a press roller set in contact with the fixing roller, configured to heat and press a to-be-fixed material by making the material pass between the fixing roller and press roller; and

an induction heating device provided inside the fixing roller, configured to heat the fixing roller by induction heating,

wherein

the induction heating device includes a core member and an excitation coil wound around the core member, and

the apparatus satisfies a relationship represented by $L/R \times 0.3 \leqq B \leqq D/3$,

where D represents an inner diameter of the heat roller, L[μH] represents an inductance of the excitation coil, R[Ω] represents a resistance of the heat roller, and B represents a width of a portion of the core member, which opposes at least the heat roller.

2. The fixing apparatus according to claim 1, wherein the L/R satisfies a relationship represented by $24 \leqq L/R \leqq 32$.

3. The fixing apparatus according to claim 1, wherein the excitation coil is made of a Litz wire

of 16 strands, and a diameter of the Litz wire is 0.5 mm.

4. The fixing apparatus according to claim 1, wherein the core member is made of an Mn-Ni-based, Ni-Zn-based or ceramic-based material.

5. A fixing apparatus comprising:

a fixing device including a fixing roller and a press roller set in contact with the fixing roller, configured to heat and press a to-be-fixed material by making the material pass between the fixing roller and press roller; and

an induction heating device provided inside the fixing roller, configured to heat the fixing roller by induction heating,

wherein

the induction heating device includes a core member and an excitation coil wound around the core member,

the apparatus satisfies a relationship represented by $L/R \times 0.3 \leqq B \leqq D/3$,

where D represents an inner diameter of the heat roller, L[μH] represents an inductance of the excitation coil, R[Ω] represents a resistance of the heat roller, and B represents a width of a portion of the core member, which opposes at least the heat roller, and

a drive circuit configured to supply a direct

current voltage is connected to the excitation coil via a switching circuit.